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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,826	10/01/2003	Alexander Solntsev	SOLN/501US	8771

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EXAMINER

BOUTSIKARIS, LEONIDAS

ART UNIT PAPER NUMBER

2872

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,826

Applicant(s)

SOLNTSEV, ALEXANDER

Examiner

Leo Boutsikaris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 1-8 are objected to because of the following informalities:

In claim 1, line 13, "what" should be replaced by "which".

Claims 2-8 inherit the deficiency of claim 1 from which they depend.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

Claim 1, line 10, cites "said array of pixels", and it is not clear whether it refers to the light source means pixels, to the viewing screen pixels, or to both. For examination purposes, it will be assumed that it refers to the light source means pixels. Furthermore, claim 1 in lines 12-14 refers to partitioning the image generated by the light source means into an array of pixel planes that together form a three dimensional matrix of pixels with the claimed dimensions for width, height and depth. It is not clear whether the dimensions refer to each pixel plane or to the whole, and also it is not clear what is meant by a "depth" of a pixel plane. For examination

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purposes it will be assumed that the image generated by the light source means is partitioned in an array of sections/planes, each having a certain number of pixels, a width and a height.

Claims 2-8 inherit the deficiencies of claim 1 from which they depend.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5-6, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nixon (US 5,293,437).

Regarding claims 1, 3, Nixon discloses (Figs. 1, 2, 2b, line 43, col. 2 to line 11, col. 3) a fiber optic display system comprising:

a viewing screen secured within a housing 10, the screen having a surface for generating real time images;

an array of pixels 12 forming the screen surface, the screen surface having a first pixel density, and each pixel associated with the first end of an optical fiber belonging to fiber bundle 14, the optical fiber having a second end;

light source means in the form of homogeneous light emitting diodes 20, each being adapted to receive each of the second end of the optical fibers, the light means having a second pixel density;

wherein the pixels are arranged for displaying an image produced by the light source; and

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the image generated by the light source means is partitioned into an array of pixel planes 64, 66, 68, forming a three dimensional matrix of pixels, each pixel plane being certain amount of pixels wide, and certain amount of pixels high (Fig. 9, lines 24-46, col. 5).

Regarding claim 5, the light source means comprises a heterogeneous combination of multiple homogeneous emitting light sources, e.g., R, G, B LEDs (lines 24-32, col. 5).

Regarding claim 6, the viewing screen 78 and the light source means (64, 66, 68) form a three dimensional space.

Regarding claim 8, the light source means are remotely located from the viewing surface (Fig. 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nixon (US 5,293,437) in view of Harootian (US 5,303,373).

Nixon discloses all the limitations of the above claim except for teaching that the first pixel density of the viewing screen surface is greater than the second pixel density of the light source means. Harootian discloses an image transfer device comprising a fiber optic bundle (Figs. 1a-1c), the bundle connecting the two image source/display surfaces 9 such that the image is transferred from the surface with the larger dimensions to the surface having the smaller

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dimensions, i.e., resulting in the screen surface having greater pixel density of fiber optic terminations than the source surface (lines 40-47, col. 9), since the number of fiber elements is the same at both ends (lines 8-10, col. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the pixel densities of the screen surface and the light source means in Nixon's display system such that the image is transferred from a less dense to a more dense pixellated surface, as taught by Harootian, for the purpose of achieving maximization of resolution (see line 32, col. 3 in Harootian).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nixon (US 5,293,437).

Nixon discloses all the limitations of the above claim except for specifically disclosing that the LEDs are in close proximity of the screen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the fiber bundle 14 in Nixon's display system short enough so that the LEDs are in close proximity to the screen, since such modification would have involved a mere change in the size of a component. Scaling up or down of an element which merely requires a change in size is generally considered as being within the ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976). Here, such change would result in a more compact display device.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nixon (US 5,293,437) in view of Wallace (US 5,911,024).

Nixon discloses all the limitations of the above claim except for teaching that the light source means comprises homogeneous projecting light sources. Wallace discloses a fiber optic display screen (Fig. 5) wherein each fiber of the fiber bundle 56 terminates in a projecting light source in the form of image producing CRT (lines 60-65, col. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use CRTs as the image generating sources in the fiber optic display system of Nixon, since CRTs are reliable image generators providing high-intensity, high contrast images.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,628,867. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the present application includes all the positive limitations of claim 1 of the '867 patent, including the limitation that the image generated by the light source means is partitioned into an array of light source cells/pixel planes, each cell having a specific width and height.

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Conclusion

The art made of record and not relied upon is considered pertinent to applicant's disclosure. Sisodia (US 2004/0001679, Figs. 2, 5) discloses a fiber optic display system wherein the input images are combined to yield an output image at the other end of the fiber bundle, that is smaller in area than the sum of the input image areas (see Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo Boutsikaris, Ph.D.
Patent Examiner, AU 2872
May 17, 2004

